

be spaces between the segments, and those spaces and/or the aforementioned channel allow steam behind the segment associated with a particular diaphragm, as the steam pressure increases, forcing the ring diameter smaller to seal about the shaft.

The foregoing description is meant to be illustrative and not limiting. Various changes, modifications, and additions may become apparent to the skilled artisan upon a perusal of this specification, and such are meant to be within the scope and spirit of the invention as defined by the claims.

Claims that recite this invention include:

1. A packing segment for an apparatus that extracts work from the expansion of a gaseous working fluid, said apparatus comprising a rotating shaft disposed in a casing, said packing segment disposed in a ring formed from a plurality of packing segments and centered on an axis defined by said shaft to provide a seal therearound, said segment comprising: an inner face for sealing against said shaft; at least one brush seal disposed on the inner face; opposing ends cut parallel with radii of said axis; and said brush seal having opposing ends at least one of said end cut non-parallel with radii of said axis.

2. The packing segment of claim 1, wherein both ends of said brush seal are cut non-parallel with radii of said axis.

3. The packing segment of claim 1, said inner face further comprising a plurality of fins.

4. The packing segment of claim 1, said inner face comprising a plurality of brush seals.

1 5. The packing segment of claim 3, wherein the fins extend different
2 distances from the inner face.

1 6. A brush seal for an apparatus that extracts work from the expansion of a
2 gaseous working fluid, said apparatus comprising a rotating shaft disposed in a casing,
3 said brush seal in the geometry of a ring formed from a plurality of adjacent abutting
4 packing segments and centered on an axis defined by said shaft to provide a brush seal
5 therearound, each said segment comprising: an inner face for sealing against said
6 shaft; at least one brush seal disposed on the inner face; opposing ends cut parallel
7 with radii of said axis; said brush seal having opposing ends cut non-parallel with radii
8 of said axis, one of said ends cut angled to form a tongue extending past the segment
9 end and the other of said ends cut at the same angle relative to said segment to
10 provide a groove for accepting a tongue formed by a brush seal on another packing
11 segment.

1 7. The brush seal of claim 6, said inner face further comprising a plurality
2 of fins.

1 8. The brush seal of claim 6, said inner face comprising a plurality of brush
2 seals.

1 9. The brush seal of claim 7, wherein the fins extend different distances
2 from the inner face.

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